


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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|---|--|---|--|-----------------------|
| Applicant's or agent's file reference JML040052/FTH | | FOR FURTHER ACTION | | See Form PCT/IPEA/416 |
| International application No. PCT/EP2004/004261 | | International filing date (day/month/year) 05.04.2004 | Priority date (day/month/year) 10.04.2003 | |
| International Patent Classification (IPC) or national classification and IPC A62B18/08 | | | | |
| Applicant INTERTECHNIQUE ET AL. | | | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 3 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | | | |
| Date of submission of the demand 08.11.2004 | | Date of completion of this report 18.01.2005 | | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | | Authorized Officer van Bilderbeek, H. Telephone No. +31 70 340-3657 | | |



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/004261

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-7 as originally filed

Claims, Numbers

1-10 received on 07.12.2004 with letter of 07.12.2004

Drawings, Sheets

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☒ the claims, Nos. 8
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/004261

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-10 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-10 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-10 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item I

Basis of the report

Regarding section 1 the present claim 8 is based on original claim 1, 8 and 9. However the feature 'said information serving in particular to provide assistance in flying.' has been deleted. Therefore, this claim does not meet the requirements of Article 34 PCT. For the purpose of the examination this claim has been understood as including this feature.

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial
applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1: US 2003/002164 A1 (MCDONALD THOMAS K ET AL) 2 January 2003 (2003-01-02)

D2: US 2002/189617 A1 (CORDERO ENRIQUE A ET AL) 19 December 2002 (2002-12-19)

The document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1 and 6, and shows a protective shield for protecting the eyes against smoke and adapted to be applied to the upper portion of the face of a user around the eyes and including locking means suitable for temporarily fixing it to a face mask such as a mask for supplying breathing gas to an aircraft flight crew member.

The subject-matter of claim 1 and 6 differs from this known device in that the shield includes a display device adapted to enable a user whose face is covered by the shield to view information in the user's field of view, said display device further comprises connection means enabling images to be supplied to said display device, said information serving in particular to provide assistance in flying.

The subject-matter of claim 1 and 6 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as providing additional means for information supply.

The solution to this problem proposed in claim 1 and 6 of the present application is

considered as involving an inventive step (Article 33(3) PCT) for the following reasons: the inclusion of said connection means is not suggested in the prior-art, and the choice of its inclusion is in itself **not** obvious because the problem it solves has not been addressed by the prior-art. Also no hints can be found in the present state of the art that teach to modify the known arrangements to produce the device as claimed.

Claims 2 to 5 and claim 7 are dependent on claim 1 and 6 respectively and as such also meet the requirements of the PCT with respect to novelty and inventive step.

The document D2 is regarded as being the closest prior art to the subject-matter of independent claim 8 and discloses a storage box adapted to receive a crew oxygen mask.

The subject-matter of claim 8 differs from this known device in that the storage box is adapted to receive a protective shield for protecting the eyes against smoke and adapted to be applied to the upper portion of the face of a user around the eyes, said protective shield including locking means suitable for temporarily fixing it to a face mask such as a mask for supplying breathing gas to an aircraft flight crew member, said shield further comprising a display device adapted to enable a user whose face is covered by the shield to view information in the user's field of view, (said information serving in particular to provide assistance in flying), said storage box further comprising a light transmission system adapted to convey a light signal from the display device out from the storage box, thereby constituting a light signal that is visible to a user without it being necessary for the user to extract the shield from the storage box.

The subject-matter of claim 8 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as providing means for testing the display device.

The solution to this problem proposed in claim 8 of the present application is considered as involving an inventive step (Article 33(3) PCT) because said light transmission system is not suggested in the prior-art, and the choice of its inclusion is in itself **not** obvious because the problem it solves has not been addressed by the prior-art. Also no hints can be found in the present state of the art that teach to modify the known arrangements to produce the device as claimed.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2004/004261

Claims 9 and 10 are dependent on claim 8 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

JC12 Rec'd PCT/PTC 05 OCT 2005

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CLAIMS

1. A protective shield (1) for protecting the eyes against smoke and adapted to be applied to the upper portion of the face of a user around the eyes, and
5 including locking means (2) suitable for temporarily fixing it to a face mask (3) such as a mask for supplying breathing gas to an aircraft flight crew member, the shield being characterized by the fact that it includes a display device (5) adapted to enable a user whose face is
10 covered by the shield (1) to view information in the user's field of view, said display device further comprising connection means 9 enabling images to be supplied to said display device 5, said information serving in particular to provide assistance in flying.
- 15 2. A shield according to claim 1, in which the display device (5) is placed outside the shield (1) when the shield (1) is covering the face of the user.
- 20 3. A shield according to claim 1, in which the display device (5) includes light transmission means (6) disposed inside the shield (1) when the shield (1) is covering the face of the user.
- 25 4. A shield according to any preceding claim, in which the display device (5) is a device for projecting a light signal onto the retina.
5. A shield according to any preceding claim, in which
30 the display device (5) is removably mounted.
6. Head protection equipment, in particular for aircraft flight crew, the equipment comprising:
· a face mask (3) adapted to be applied in use to
35 the lower portion of the face of a user around the user's nose and mouth, and to supply the user with breathing gas; and

a protective shield (1) for protecting the eyes and adapted to be applied to the upper portion of the user's face around the eyes, and including locking means (2) adapted to fix the shield on the face mask (3) in
5 temporary manner;

the equipment being characterized by the fact that it includes a display device (5) adapted to enable the user whose face is covered by the shield (1) to view
10 information in the user's field of view, in particular information for providing assistance in flying, said equipment further comprising connection means (9) enabling images to be supplied to said display device (5) via the feed pipe (8) of said mask.

15 7. Equipment according to claim 6, including connection means (9) adapted to transmit information from the mask to the display device (5).

8. A storage box adapted to receive a protective shield
20 (1) for protecting the eyes against smoke and adapted to be applied to the upper portion of the face of a user around the eyes, said protective shield including locking means (2) suitable for temporarily fixing it to a face mask (3) such as a mask for supplying breathing gas to an
25 aircraft flight crew member, said shield further comprising a display device (5) adapted to enable a user whose face is covered by the shield (1) to view information in the user's field of view, said storage box further comprising a light transmission system (18)
30 adapted to convey a light signal (17) from the display device (5) out from the storage box (13), thereby constituting a light signal that is visible to a user without it being necessary for the user to extract the shield (1) from the storage box (13).

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9. A storage box according to claim 8, further adapted to receive said face mask (3) with said protective shield (1).
- 5 10. A storage box according to claim 8 or 9, including connection means (9) for the display device (5) to transmit information from the storage box to the shield (1) or to a face mask (3) when the mask is placed on the face of the user.